ARCHAEOLOGY OF TRANTS, MONTSERRAT. PART 2. VERTEBRATE FAUNA

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ABSTRACT

Trants (MS-G1) is a Saladoid site located on the island of Montserrat in the Lesser Antilles. Vertebrate remains provide evidence for the use of both terrestrial and marine resources. Fish were obtained primarily from banks or reefs rather than inshore or offshore waters. The terrestrial resources include animals introduced by humans and indigenous animals eventually driven to extinction as a result of human activities. The ratio of marine to terrestrial resources is similar to that reported for other Saladoid sites in the Lesser Antilles. Differences among Saladoid faunal collections from the Lesser Antilles suggest that people living on each island knew well how to make use of local animals and were not transient South Americans unfamiliar with the resources offered by Caribbean islands.

INTRODUCTION

In 1984 David W. Steadman, David R. Watters, Gregory K. Pregill, and Elizabeth J. Reitz (Steadman et al., 1984b) argued that analysis of archaeological faunal remains from Montserrat was important for several reasons. First, it could identify the indigenous fauna used by Saladoid colonizers during what appears to be the first human occupation of the island. Second, faunal identification could establish the contemporaneity of Caribbean peoples with species now extinct on Montserrat. Third, vertebrate remains could be compared to those found in pre-Columbian sites elsewhere in the West Indies, thereby providing information useful on a regional scale.

These contributions are related to several broad Caribbean issues. One of the most important of these is the character of the adaptation made by Saladoid peoples when they left the South American mainland to colonize islands whose vertebrate resources were unfamiliar. Within a broadly similar pattern, it appears likely that Saladoid immigrants developed strategies appropriate to the exploitation of those vertebrate resources found on each island colonized.

An important aspect of this adaptation is the role of terrestrial animals in subsistence efforts of Saladoid peoples as they colonized the island chain. Elizabeth Wing (1989) observed that remains of terrestrial mammals, pigeons, lizards, and crabs are most abundant in either deposits from the Greater Antilles or early deposits in the Lesser Antilles. Wing (1989) found that an average of 34% of the individuals in Greater Antilles faunal assemblages were terrestrial animals while 38% of the individuals in early Lesser Antilles faunal collections were terrestrial (Table 1). The two most common terrestrial animals were rice rats and hutias. In contrast, 19% of the individuals in faunal assemblages from late deposits in the Lesser Antilles and 17% of the individuals in deposits from the Bahamas were terrestrial. Ranges for the four categories overlap; and variations in sample size

Table 1.—*Terrestrial animals in the Lesser Antilles. Data from the Bahamas, Greater Antilles, and Early and Late sites from the Lesser Antilles from Wing (1989). Trants data from this paper, excluding Stratum A.*

	Average %MNI
Lesser Antilles	
Early sites	38%
Late sites	19%
Trants	
¼″ samples	57%
⅛″ samples	44%

and recovery techniques limited the conclusions that could be drawn from these observations (Wing, 1989).

Extensive use of indigenous terrestrial animals at early sites is found in conjunction with evidence that colonists introduced South American animals such as opossum, guinea pig, agouti, and dog into the West Indies (Wing, 1989). This use of indigenous terrestrial fauna and transportation of exotic animals throughout the Caribbean system extended into the post-Columbian period. Its impact on the zoogeography of the Caribbean caused the extinction of many indigenous forms (Olson, 1978, 1982; Pregill and Olson, 1981; Olson and Pregill, 1982; Steadman et al., 1984a; Morgan and Woods, 1986; Woods, 1989, 1990). Extinctions were also probably an important factor in early human colonization of the Lesser Antilles (Keegan and Diamond, 1987).

This issue will be addressed using data from a Saladoid occupation at the Trants site (MS-G1) on Montserrat. The Trants vertebrate collection is relevant because the sample size is large and the recovery technique used during excavation was good. The faunal data provide evidence for the use of indigenous and exotic terrestrial animals at an early Ceramic Age site in the Lesser Antilles. The Trants data indicate that Saladoid colonists made use of the resources found on Montserrat in a way not suggested by faunal assemblages from elsewhere in the Lesser Antilles, but nonetheless consistent with the general Caribbean pattern described by Wing (1989).

MATERIALS AND METHODS

Trants is a large, pre-Columbian site located on the eastern, or windward, side of Montserrat, one of the northern Lesser Antilles (Fig. 1). Montserrat is a small island of volcanic origin and Trants is located on one of the largest sections of relatively flat land found on the island (Steadman et al., 1984b). Sandy beaches and shallow inshore waters are limited around Montserrat. The east coast of the island is characterized by rugged cliffs. These are found north of Trants Bay as well as south of Farm Bay (Fig. 2). The beach at Trants Bay, just north of the site, is composed of cobble but Farm Bay has a sandy beach. The site is roughly 400 m inland from a rocky portion of the coast between the two bays, about 300 m from Trants Bay and 600 m from Farm Bay (Fig. 2). A small water course, Farm River Ghaut, runs south of the site. Today the stream is interrupted by a dam, but in the past it probably was a permanent water course. The mouth of Farm River Ghaut may have formed one of the few estuaries on the island, and a mangrove swamp may also have been present in Farm Bay (Newsom, 1994). The waters of Montserrat contain more patch reefs than fringe reefs and they are mainly found on the north, west, and south of the island rather than near Trants. However, there are some small patch reefs and seagrass beds in the limited inshore area adjacent to Trants.

The specimens reported here were excavated from the Trants site (MS-G1) in 1979 by Watters and in 1990 by Watters and James B. Petersen (Petersen and Watters, 1991; Watters, 1994). In the discussion that follows, reference will be made to materials recovered from a 2 × 2 m excavation

Fig. 1.—The Trants prehistoric site is located on the east coast of Montserrat in the northern Lesser Antilles.

unit (Test Pit 1) dug in the core area in 1979 (Steadman et al., 1984b). The 1979 excavation was in 10 cm increments and sediments were dry-screened through ⅛″ mesh. These increments were combined into three analytical strata: Strata I(D), I, and II. Strata I and II were interpreted as Saladoid occupations. Vertebrates from Stratum I(D), the uppermost level, were not included in the calculations because of historic period disturbance.

The 1990 vertebrate remains are from three 1 × 1 m excavation units: N396E571, N421/22E645, and N596E571, all within the core area (Fig. 2). Each of the 1990 excavation units was dug in four quadrants. Faunal remains in three quadrants were collected in ¼″ mesh screens and in the fourth quadrant using ⅛″ mesh screen. Some 1 mm window-screened samples were also collected, but time did not permit their study. In order to explore the impact of recovery techniques, vertebrate materials from the ¼″ quadrants are compared to those from the ⅛″ quadrants. These are referred to as ¼″ samples and ⅛″ samples.

The 10 cm-levels of the 1990 excavation units were combined into three analytical strata, two of which are associated with the Saladoid occupation. Stratum A is the historic hoe zone, Stratum B was deposited around A.D. 60–200, and Strata C and D were deposited around 480–10 B.C. (Petersen and Watters, 1991). Data from Stratum A are excluded from this analysis because historic and prehistoric artifacts were mixed in Stratum A. An Old World rat (*Rattus* sp.) was found in Feature 3, Unit 421/22E645 [Provenience Number (PN) 2027] which underlies Stratum A. Since *Rattus* clearly is a post-Columbian animal, it was necessary to exclude Feature 3 and all deposits above it to insure that only pre-Columbian vertebrate remains were studied. The Stratum D assemblage was so small that it was combined with samples from Stratum C. Although each of the strata from the three units may be from different time periods within the Saladoid occupation, or represent distinct activity areas within a large settlement, their temporal or social relationships have not been clarified. Data for each of the strata and units are presented separately, but are combined in the discussion. Other details of excavation are provided elsewhere (Petersen and Watters, 1991; Watters, 1994).

Faunal materials from the 1979 excavation were studied by several people. Birds and mammals were examined by Steadman, reptiles by Pregill, and fish by Reitz. All vertebrate materials recovered during the 1990 excavation were studied by Reitz using the comparative skeletal collections at the Florida Museum of Natural History and the University of Georgia Museum of Natural History. During the 1990 study, a record was made of the Number of Identified Specimens (NISP), the portion of each bone recovered, the bone's symmetry, and an estimate of age at death. Modifications to the bones (primarily burning) and weights were also recorded but are not presented here; these data are on file at the Georgia Museum of Natural History and are available upon request.
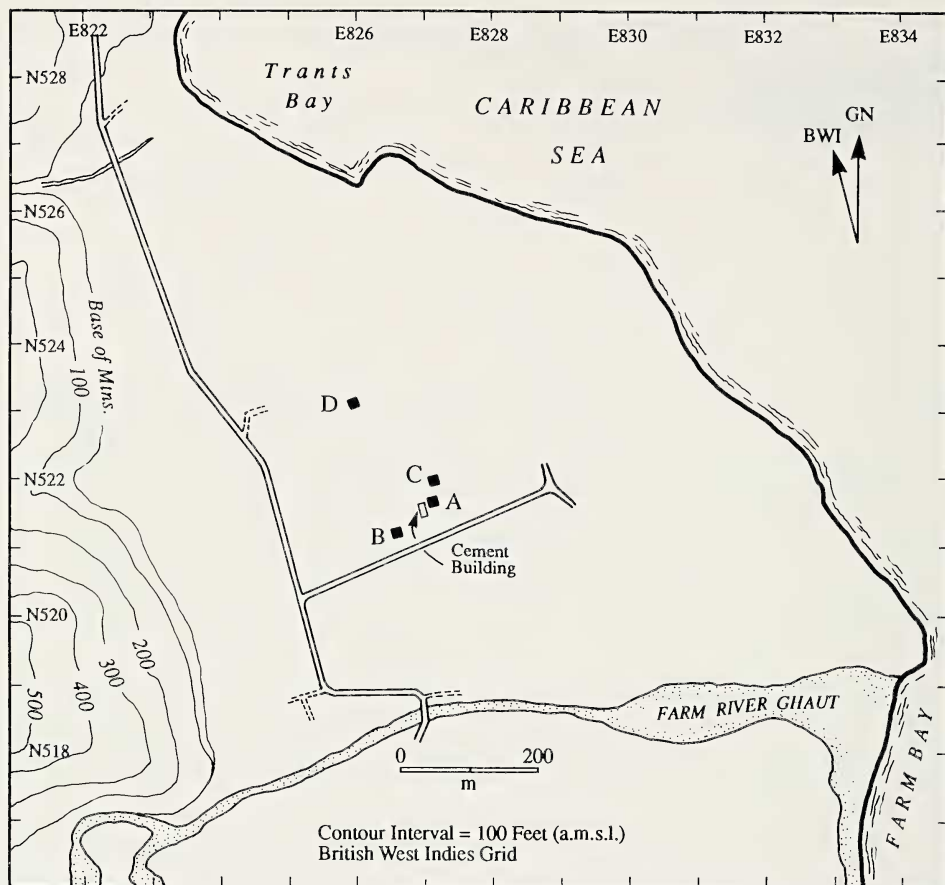
Fig. 2.—The Trants site with the excavation units noted using British West Indies grid (Watters, 1994). Unit A is the 1979 Test Pit 1, Unit B is N396E571, Unit C is N421/422E645, Unit D is N596E571. Excavation units are not to scale.

In order to estimate the Minimum Number of Individuals (MNI), samples from the three excavation units (N396E571, N421/22E645, and N596E571) were kept separate, as were samples from each of the three strata, creating nine analytical units. Because only a few elements could be identified to genus, a higher MNI estimate was sometimes obtained by family or tribe, than at the genus or species level. For example, more individuals might be estimated when Oryzomyini, Oryzomyini A, and Oryzomyini B were combined than when bones identified as Oryzomyini A or Oryzomyini B were counted independently. When that was the case, the estimates of MNI for lower taxonomic levels are included in the species lists in parentheses. Estimates included in parentheses are not included in the total for each list or in subsequent calculations.

Relative age of oryzomyines was estimated based on the degree of epiphyseal fusion for diagnostic elements. When animals are young their bones are not fully formed. Along the area of growth the shaft and the end of the bone, the epiphysis, are not fused. When growth is complete the shaft and epiphysis fuse. While environmental factors influence the actual age at which fusion is complete (Watson, 1978), elements fuse in a regular temporal sequence (e.g., Silver, 1963; Schmid, 1972; Gilbert, 1980). In most cases, one end of the bone fuses before the other. Bones were recorded as complete, proximal (p), or distal (d), and either fused (f) or unfused (unf). Hence a humerus recorded as "punfdf" would be unfused at the proximal end and fused at the distal end.

Age was estimated for oryzomyines based on toothwear. The criteria defined by Wing (1993b) were applied to those teeth still in the maxilla or mandible. Teeth in Stage 1 are unworn molars, stage 2 is

Table 2.—*Bone count (NISP) and Minimum Number of Individuals (MNI) from N396E571, Trants, Montserrat, by stratum (A, B or C/D) and recovery technique.*

Taxon	N396E571 ¼" samples						N396E571 ⅛" samples					
	Stratum						Stratum					
	A		B		C/D		A		B		C/D	
	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI
UID fish	3		39		33		76		274		51	
Serranidae	1	1			1				2			
Epinephelus sp.			1	1	5	1	2	1	3	1		
Mycteroperca sp.			1	1			1	1	6	6		
Carangidae			2	1			3	1	2			
Caranx sp.											1	1
Selene sp.									1	1		
Lutjanidae			1	1	1	1						
Haemulidae			1	1			1	1				
Sparidae									2	1		
Bodianus rufus			2	1	1	1						
Halichoeres sp.							1	1	1	1		
Scaridae									1	1		
Sparisoma sp.			1	1			1	1				
Scombridae	1	1					1	1				
Balistidae			1	1	1	1			3	1		
UID turtle	1	1	3	1								
Cheloniidae									1	1		
UID lizard							3		1			
Iguana sp.							1	1	14	1	2	1
Colubridae					1	1	3	1	8	1	2	1
UID bird							12				3	
Columbidae			3	1	2	1			2	1		
Passeriformes							1	1	1	1	1	1
UID mammal	2	1	1				1		80		6	
cf. Oryzomyini			2	1	2	1	15		22			
Oryzomyini							15	4	47	3	1	1
Oryzomyini A							5	(3)	3	(1)		
Oryzomyini B							1	(1)	2	(2)		
Dasyprocta aguti							4	1				
Canis familiaris			3	1					12	1	2	1
Totals	8	4	61	12	47	7	135	15	500	21	69	6

characterized by slight wear on the tips of the cusps, stage 3 teeth are substantially worn, and teeth classified as Stage 4 were worn to the point that the tooth surface was flat and the dentine entirely exposed. Animals with toothwear classified as Stages 1 or 2 are considered juveniles and those with toothwear in Stages 3 or 4 are referred to as adults. As with fusion, environmental variables, especially type of forage, are known to influence the rate of wear (Grant, 1978).

Measurements of bones were taken where preservation allowed. In the case of birds and mammals, these measurements followed the guidelines established by Driesch (1976). Additionally, the anterior width of the centrum of the fish atlas and the alveolar length (AL) of oryzomyine mandibles and maxilla were recorded. Ideally only completely fused bones would be measured; however, oryzomyines typically do not live long enough for many bones to fuse. Consequently, greatest length (GL) was taken of unfused but otherwise complete humerus, femur, tibia, and calcaneus diaphyses. These exceptions are noted with the measurements. These measurements represent animals that had not attained full maturity and represent the size/age of individuals in that portion of the oryzomyine population exploited by people at Trants. This procedure permits comparison of the Trants oryzomyine data with those reported by Wing (1993*b*).

The species identified are summarized by four faunal categories based on vertebrate class and habitat preferences: Terrestrial, Inshore, Reef, and Pelagic. All mammals, birds, and reptiles were classified

Table 3.—*Bone count (NISP) and Minimum Number of Individuals (MNI) from N421/22E645, Trants, Montserrat, by stratum (A, B, or C/D) and recovery technique.*

	N421/22E645 ¼″ samples						N421/22E645 ⅛″ samples					
	Stratum						Stratum					
	A		B		C/D		A		B		C/D	
Taxon	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI
UID fish	146		10		189		535		10		272	
Tylosaurus sp.							1	1				
Serranidae	1						1				6	
Epinephelus sp.	18	2			40	3	10	3			24	3
Mycteroperca sp.	1	1					9	8			2	1
Carangidae	2	1							1	1		
Trachinotus goodei							1	1				
Lutjanidae	1											
Lutjanus sp.	1	1										
Haemulidae							1	1			1	
Anisotremus sp.	1	1									1	1
Haemulon sp.											1	1
Labridae											1	1
Bodianus rufus	1	1	1	1			1	1				
Halichoeres sp.	5	2			9	2	2	1				
Scaridae							1					
Scarus sp.							1	1				
Sparisoma sp.	2	1	1	1								
Balistidae	3	1					87	1			2	1
UID reptile							4					
UID turtle	25						8	1				
Cheloniidae	6	1			1	1						
UID lizard	2						4				9	
Iguana sp.	11	1	1	1	21	3	22	1			18	2
Teiidae					1						3	1
Ameiva sp.					3	1	2	1				
Colubridae					1	1	6	1				
UID bird	14		1		58		37				28	
Columbidae	18	2	3	1	37	4	6	1			8	1
Passeriformes					32	8	4	1			16	3
UID mammal	8		3		2		9					
UID large mammal	8				1							
cf. Oryzomyini	21		1	1	10		112		1	1	19	
Oryzomyini	66	7			10	3	17	3			31	3
Oryzomyini A	1	(1)			3	(1)	11	(2)				
Oryzomyini B	13	(2)			6	(2)	15	(1)				
Rattus sp.							1	1				
Dasyprocta aguti	2	1					5	1				
Canis familiaris	1	1			1	1						
Totals	378	24	21	5	425	27	913	29	12	2	442	18

as Terrestrial, including ducks, rails, and sea turtles. These animals are closely associated with inshore waters and their capture might have been from either land or sea. In placing them in the Terrestrial category preference in capture technique is given to capture of nesting animals. Inshore taxa include sharks, palometa, porgies, drums, and gobies. The only pelagic fishes were mackerels. All other fishes were classified as reef inhabitants. Some, if not all, of these animals might be found in other habitats, either occasionally or because one or two members of the family occupy another habitat routinely. In these cases, classification reflects the location most members of each family commonly frequent and hence the most likely habitat in which they would have been captured, although this is not the only habitat that might have been exploited.

Table 4.—*Bone count (NISP) and Minimum Number of Individuals (MNI) from N596E571, Trants, Montserrat, by stratum (A, B or C/D) and recovery technique.*

Taxon	N596E571 ¼" samples						N596E571 ⅛" samples					
	Stratum						Stratum					
	A		B		C/D		A		B		C/D	
	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI
Ginglymostoma cirratum			1	1								
Carcharhinidae									1	1		
UID fish	66		315		31		251		802		68	
Serranidae	1		5									
Diplectrum sp.							1	1				
Epinephelus sp.	4	1	47	4	2	1	4	2	23	4	1	1
Mycteroperca sp.	1	1	1	1			1	1	9	8	2	1
Carangidae			1	1	1	1	1	1	4		1	1
Caranx sp.									4	1		
Trachinotus goodei									2	2		
Lutjanidae			6	2	1	1			1			
Lutjanus sp.	4	1							5	1		
Ocyurus chrysurus											2	1
Haemulidae			2						1			
Anisotremus sp.			2	2					1	1		
Conodon nobilis							1	1				
Haemulon sp.			3	1			1	1				
Sciaenidae									1	1		
Bodianus rufus			1	1								
Halichoeres sp.	1	1	3	1					7	2		
Sparisoma sp.	1	1										
Gobiidae									1	1		
Scombridae	1	1							1	1		
Balistidae									4	1		
UID turtle			1									
Cheloniidae	16	1	44	1					8	1		
UID lizard							12		33		3	
Iguana sp.	11	1	85	3	15	1	2	1	32	1		
Teiidae									2	2		
Ameiva sp.							1	1	1	(1)	1	1
Colubridae			1	1			2	1	18	1	1	1
UID bird			23		4		9		32		3	
Anatidae			1	1					1	1		
Rallidae			2	1								
Columbidae	4	2	18	3	3	1	5	1	7	4	1	1
Passeriformes	1	1	7	2	2	1	6	1	24	2	3	1
UID mammal	4		3						1			
cf. Oryzomyini	3	1					16		17			
Oryzomyini			2	1			1	1				
Oryzomyini A			1	(1)					1	1		
Oryzomyini B									1	1		
Dasyprocta aguti							1	1				
Totals	118	12	575	27	59	6	315	14	1045	38	86	8

RESULTS

Vertebrate remains in the samples from the three Trants excavation units in-dicate that both terrestrial and marine resources were used by residents (Tables 2–4). In general, similar resources were present in all three units. The highest percentages were from the Terrestrial and Reef categories. Animals from inshore

waters were very rare and offshore conditions were represented by a single individual.

In each unit, Terrestrial vertebrates were more common in Stratum C/D than in Stratum B. The frequency of Terrestrial vertebrates ranged from 50% to 71% in Stratum C/D and from 39% to 57% in Stratum B. Terrestrial individuals were least common in Unit N396E571, Stratum B (Table 2) with 39% of the individuals; 12% of the individuals were rice rats and 9% were pigeons (Columbidae) and passerine birds (Passeriformes). Terrestrial individuals were most common in Unit N421/22E645, Stratum C/D (Table 3), representing 71% of the individuals; 13% of the individuals were rice rats (Oryzomyini) and 36% were pigeons and passerine birds. Oryzomyines occurred in all strata of all units, with the exception of Stratum C/D in Unit N596E571 (Table 4), which contained no mammals at all. Although terrestrial resources contributed 50% of the individuals in the sample from that stratum, these were exclusively lizards, a snake, pigeons, and passerine birds.

The samples from the quadrants recovered using ¼″ and ⅛″ mesh were similar, at least in terms of MNI (Tables 5, 6). The ¼″ component contained 32 identified taxa, and the ⅛″ component contained 39 taxa, although the latter component contained almost twice as many bones (Table 5). Terrestrial habitats contributed 57% of the individuals in the ¼″ fraction and 44% in the ⅛″ samples (Table 6). Oryzomyine rodents were present in both components in roughly equal numbers, as were reptiles. Pigeons and passerines were more common in the ¼″ samples, whereas fish individuals were more common in the ⅛″ samples. The difference between ¼″ and ⅛″ recovery techniques is more clear when the measurements are examined (Table 7). Although grouper individuals of the genus *Epinephelus* were more common than those in the genus *Mycteroperca* in the ¼″ samples, the reverse was true in the ⅛″ samples (Table 5). Significantly, *Mycteroperca* individuals are much smaller than the *Epinephelus* individuals (Table 7), which is why they were recovered primarily with the smaller-meshed screen. These two distinct sizes suggest that distinct fishing strategies were used in the capture of these two grouper genera, an observation that would not have been known if only the ¼″ samples had been studied. Since the materials recovered in the ⅛″ mesh appear to be more representative of subsistence strategies at Trants, the following comments will be based on percentages from the ⅛″ component only.

Fifty-six percent of the Trants individuals in the ⅛″ component are sharks and bony fishes (Table 6). Most of the identifications could not be made to the specific level, hence the exact nature of the habitats from which these fish were taken is uncertain. Some species, such as the nurse shark (*Ginglymostoma cirratum*) are very common inshore, especially over rocky reefs and sand flats (Randall, 1968: 9). The palometa (*Trachinotus goodei*), porgy (Sparidae), drum (Sciaenidae), and goby (Gobiidae) are also generally inshore fishes (Randall, 1968:114, 141, 149, 247). Other fishes are generally associated with coral reefs or rocky bottoms (Randall, 1968:57, 102, 121, 128, 199, 217). These include groupers (Serranidae, *Epinephelus* sp., *Mycteroperca* sp., jacks (Carangidae, *Caranx* sp., *Selene* sp.), snappers (Lutjanidae, *Lutjanus* sp., *Ocyurus chrysurus*), grunts (Haemulidae, *Anisotremus* sp., *Haemulon* sp.), wrasses (Labridae, *Bodianus rufus, Halichoeres* sp.), and parrotfishes (Scaridae, *Sparisoma* sp.). Groupers are the most abundant fish family in the Trants collection, constituting 28% of the individuals in the ⅛″ component, and indicating that rocky outcrops were commonly fished. In contrast, wrasses and parrotfishes, characteristic of reefs, constituted only 4% of the indi-

viduals in the ⅛″ samples. The only evidence that offshore waters were exploited is a single mackerel (Scombridae), which might have been taken as it swam over a bank or reef. This pelagic species contributed 1% of the individuals in the ⅛″ fraction.

All reptiles were classified as Terrestrial vertebrates. Sea turtles (Cheloniidae) are not abundant in the Trants collection, constituting only 2% of the individuals in the ⅛″ component. The individuals appear to be adults. Their scarcity probably reflects the rarity of sandy beaches for nesting on Montserrat. The east coast of the island is primarily composed of cobbles; however, Farm Bay is one of the east coast's few sandy beaches (Fig. 2) and one of the island's few seagrass beds (Eastern Caribbean Natural Area Management Program, 1980). While the classification of these turtles as Terrestrial suggests they were taken while nesting, it is also possible they were taken from the seagrass bed. The other reptiles were more clearly Terrestrial. These included iguanas (*Iguana* cf. *iguana*) and ameiva lizards (*Ameiva* cf. *pluvianotata*). Although not common on the island today, iguanas contribute 6% of the individuals in the ⅛″ component. Colubrid snakes (Colubridae) were almost as common (4% of the MNI).

Among birds, ducks and rails might be considered Inshore rather than Terrestrial resources since they could have been taken from a bay or the Farm River Ghaut. The two largest groups of birds, however, were clearly Terrestrial. These included pigeons (Columbidae) and small passerine birds (Passeriformes). Pigeons contributed 8% of the individuals in the ⅛″ component and native pigeons still survive on the island in spite of recent habitat destruction. The passerine order, which includes thrashers and finches, constituted 9% of the Trants individuals.

Eleven of the rodents in the pre-Columbian assemblage were rice rats (Oryzomyini), and an additional four were probably Oryzomyini (Table 5). Rice rats constitute 9% of the individuals in the samples recovered using ⅛″ mesh (Table 6). Two species of rice rats were present on the island. Remains were found in all three excavation units and in most of the strata, but they were most common in Stratum A, particularly in Unit N421/22E645 (Table 3), suggesting that both large and small rice rats may have survived into the post-Columbian period. They were probably driven to extinction by humans in combination with cats, dogs, and Old World rodents introduced in the recent past.

Although most of the specimens could only be identified as unidentified (UID) rodent or oryzomyine, the measurements (Table 7) suggest that there were at least two species (Fig. 3). Steadman found two species of oryzomyines in his study of the 1979 Trants vertebrate remains (Steadman et al., 1984b). He classified these as a small oryzomyine, Undescribed Species A, and a large oryzomyine, Undescribed Species B, and this distinction is followed here. At least four of the Oryzomyini individuals were the small rice rat, (Oryzomyini A), and at least five of the individuals were the large rice rat (Oryzomyini B) (Table 5). The size differences probably do not reflect simply younger versus older individuals since the alveolar lengths (Table 7) support the presence of two distinct sizes of rice rats rather than differences in maturation. The average alveolar length of the small oryzomyine mandible is 7.08 mm ($n = 3$) and the average alveolar length of the large oryzomyine mandible is 10.09 mm ($n = 4$) (Table 7). Allometric correlations between the width of the femur head and body weight (Wing and Brown, 1979: 127–129) predict an average weight of 181 g for the smaller West Indian rice rats and up to 300 g for the larger ones (Wing, 1993a). Degree of fusion (Table 7) and toothwear (Table 8) indicate that most of the rice rats in Strata B and C/D were

Table 5.—*Bone count (NISP) and Minimum Number of Individuals (MNI) for ¼″ samples and ⅛″ samples with Stratum A excluded and Strata B and C/D combined, Trants, Montserrat. All three units are combined.*

Taxon	¼″ Samples		⅛″ Samples	
	NISP	MNI	NISP	MNI
Sharks				
Ginglymostoma cirratum	1	1		
Nurse shark				
Carcharhinidae			1	1
Requiem sharks				
Fishes				
UID fish	617		1477	
Serranidae	6		8	
Sea basses				
Epinephelus sp.	95	10	51	9
Grouper				
Mycteroperca sp.	2	2	19	16
Grouper				
Carangidae	4	3	8	2
Jacks				
Caranx sp.			5	2
Jack				
Selene sp.			1	1
Lookdown				
Trachinotus goodei			2	2
Palometa				
Lutjanidae	9	5	1	
Snappers				
Lutjanus sp.			5	1
Snapper				
Ocyurus chrysurus			2	1
Yellowtail snapper				
Haemulidae	3	1	2	
Grunts				
Anisotremus sp.	2	2	2	2
Margate				
Haemulon sp.	3	1	1	1
Grunt				
Sparidae			2	1
Porgies				
Sciaenidae			1	1
Drums				
Labridae			1	1
Wrasses				
Bodianus rufus	5	4		
Spanish hogfish				
Halichoeres sp.	12	3	8	3
Wrasse				
Scaridae			1	1
Parrotfishes				
Sparisoma sp.	2	2		
Parrotfish				
Gobiidae			1	1
Gobies				
Scombridae			1	1
Mackerels				
Balistidae	2	2	9	3
Leatherjackets				

Table 5.—*Continued.*

Taxon	¼″ Samples		½″ Samples	
	NISP	MNI	NISP	MNI
Reptiles				
UID turtle	4	1		
Cheloniidae	45	2	9	2
Sea turtles				
UID lizard			46	
Iguana sp.	122	8	66	5
Iguana				
Teiidae	1		5	3
Whiptails				
Ameiva sp.	3	1	2	(2)
Ameiva lizard				
Colubridae	3	3	29	4
Non-poisonous snakes				
Birds				
UID bird	86		78	
Anatidae	1	1	1	1
Ducks				
Rallidae	2	1		
Rails				
Columbidae	66	11	18	7
Pigeons and doves				
Passeriformes	41	11	45	8
Song birds				
Mammals				
UID mammal	9		87	
UID large mammal	1			
UID rodent	15	3	59	1
Oryzomyini	12	4	79	7
Rice rat				
Oryzomyini A	4	(2)	4	(2)
Small rice rat				
Oryzomyini B	6	(2)	3	(3)
Large rice rat				
Canis familiaris	4	2	14	2
Dog				
UID vertebrate				
Totals	1188	84	2154	90

Table 6.—*Summary table of vertebrate fauna from Trants, Montserrat.*

	¼″ Samples		½″ Samples	
	MNI	%MNI	MNI	%MNI
Sharks/fishes	36	42.9	50	55.6
Reptiles	15	17.9	14	15.6
Pigeons/passerines	22	26.2	15	16.7
Other birds	2	2.4	1	1.1
Oryzomyine rodents	7	8.3	8	8.9
Dog	2	2.4	2	2.2
Totals	84		90	

Table 7.—*Measurements of vertebrate bones from Trants, Montserrat, in mm. Measurement dimensions follow Driesh (1976). PN refers to provenience number and stratum to level.*

Taxon	Element	Dimension	Measure-ment	Fusion	PN	Stratum
Ginglymostoma cirratum	vertebra	width	9.80		2214	B
Tylosaurus sp.	atlas	width	4.50		2020	A
Epinephelus sp.	atlas	width	2.35		2033	A
Epinephelus sp.	atlas	width	2.80		1913	A
Epinephelus sp.	atlas	width	2.80		1926	B
Epinephelus sp.	atlas	width	3.80		2024	A
Epinephelus sp.	atlas	width	5.96		2019	A
Epinephelus sp.	atlas	width	6.73		1959	A
Epinephelus sp.	atlas	width	6.81		1939	C
Epinephelus sp.	atlas	width	7.05		2050	A
Epinephelus sp.	atlas	width	7.29		2215	B
Mycteroperca sp.	atlas	width	1.70		2220	C
Mycteroperca sp.	atlas	width	1.80		2209	B
Mycteroperca sp.	atlas	width	1.90		1926	B
Mycteroperca sp.	atlas	width	1.90		1926	B
Mycteroperca sp.	atlas	width	1.95		2100	C
Mycteroperca sp.	atlas	width	2.00		1913	A
Mycteroperca sp.	atlas	width	2.02		2032	A
Mycteroperca sp.	atlas	width	2.10		1964	A
Mycteroperca sp.	atlas	width	2.10		1980	B
Mycteroperca sp.	atlas	width	2.10		1980	B
Mycteroperca sp.	atlas	width	2.10		1980	B
Mycteroperca sp.	atlas	width	2.10		2020	A
Mycteroperca sp.	atlas	width	2.10		2020	A
Mycteroperca sp.	atlas	width	2.20		2020	A
Mycteroperca sp.	atlas	width	2.20		2027	A
Mycteroperca sp.	atlas	width	2.30		1921	B
Mycteroperca sp.	atlas	width	2.30		2024	A
Mycteroperca sp.	atlas	width	2.40		1937	B
Mycteroperca sp.	atlas	width	2.40		2209	B
Mycteroperca sp.	atlas	width	2.50		1926	B
Mycteroperca sp.	atlas	width	2.56		1934	B
Mycteroperca sp.	atlas	width	2.60		1980	B
Mycteroperca sp.	atlas	width	2.60		1980	B
Mycteroperca sp.	atlas	width	2.67		2206	B
Mycteroperca sp.	atlas	width	2.90		2020	A
Mycteroperca sp.	atlas	width	3.20		2027	A
Carangidae	atlas	width	2.80		1909	A
Caranx sp.	atlas	width	2.00		1947	C
Selene sp.	atlas	width	3.60		1917	B
Trachinotus goodei	atlas	width	2.20		2209	B
Trachinotus goodei	atlas	width	3.40		2209	B
Lutjanus sp.	atlas	width	5.69		1928	B
Ocyurus chrysurus	atlas	width	1.40		2220	C
Sparisoma sp.	atlas	width	5.41		1966	A
Gobiidae	atlas	width	1.12		2209	B
Anatidae	carpometacarpus	Bp	11.80		1984	B
Anatidae	carpometacarpus	Did	5.80		1984	B
Anatidae	carpometacarpus	GL	52.20		1984	B
Rallidae	humerus	Bd	7.30		1993	B
Rallidae	humerus	Bp	10.00		1993	B
Rallidae	humerus	GL	46.50		1993	B
Rallidae	tibiotarsus	Bd	5.30		1993	B
Rallidae	tibiotarsus	Dd	5.60		1993	B
Columbidae	carpometacarpus	Bp	7.00		1984	B
Columbidae	carpometacarpus	Bp	7.20		1980	B

Table 7.—*Continued.*

Taxon	Element	Dimension	Measurement	Fusion	PN	Stratum
Columbidae	carpometacarpus	Bp	7.40		2072	C
Columbidae	carpometacarpus	Bp	7.90		1974	B
Columbidae	carpometacarpus	Bp	8.00		2055	A
Columbidae	carpometacarpus	Bp	8.20		1976	B
Columbidae	carpometacarpus	Bp	9.90		2072	C
Columbidae	carpometacarpus	Did	4.20		2020	A
Columbidae	carpometacarpus	Did	4.30		1984	B
Columbidae	carpometacarpus	Did	4.80		1974	B
Columbidae	carpometacarpus	Did	4.80		1980	B
Columbidae	carpometacarpus	Did	5.20		2072	C
Columbidae	carpometacarpus	Did	5.40		2029	A
Columbidae	carpometacarpus	Did	6.90		2066	C
Columbidae	carpometacarpus	GL	24.60		1984	B
Columbidae	carpometacarpus	GL	24.90		1980	B
Columbidae	carpometacarpus	GL	26.50		1974	B
Columbidae	coracoid	Lm	27.00		1972	A
Columbidae	coracoid	Lm	31.40		1971	A
Columbidae	coracoid	Lm	31.50		2066	C
Columbidae	coracoid	Lm	32.70		2042	C
Columbidae	coracoid	Lm	34.90		2072	C
Columbidae	coracoid	Lm	35.80		2066	C
Columbidae	coracoid	Lm	36.80		2072	C
Columbidae	femur	Bd	7.20		2064	B
Columbidae	femur	Bd	7.30		2072	C
Columbidae	femur	Bd	7.80		2041	C
Columbidae	femur	Bp	7.10		1984	B
Columbidae	femur	Bp	7.20		2223	C
Columbidae	femur	Bp	7.40		2020	A
Columbidae	femur	Bp	7.50		2072	C
Columbidae	femur	Bp	8.50		1926	B
Columbidae	femur	Dd	5.50		2064	B
Columbidae	femur	Dd	6.00		2072	C
Columbidae	femur	Dd	6.50		2041	C
Columbidae	femur	Dp	4.10		1984	B
Columbidae	femur	Dp	4.40		2020	A
Columbidae	femur	Dp	4.70		2072	C
Columbidae	humerus	Bd	7.90		1941	C
Columbidae	humerus	Bd	7.90		1972	A
Columbidae	humerus	Bd	8.10		2022	A
Columbidae	humerus	Bd	8.50		2066	C
Columbidae	humerus	Bd	9.20		1984	B
Columbidae	humerus	Bd	9.20		2203	B
Columbidae	humerus	Bd	9.50		1961	A
Columbidae	humerus	Bd	9.50		1972	A
Columbidae	humerus	Bd	9.50		2024	A
Columbidae	humerus	Bd	12.50		2085	C
Columbidae	humerus	Bp	13.10		2041	C
Columbidae	humerus	Dip	13.10		1972	A
Columbidae	humerus	GL	39.50		1972	A
Columbidae	radius	Bd	5.00		2066	C
Columbidae	radius	Bd	5.50		2072	C
Columbidae	radius	GL	53.90		2066	C
Columbidae	scapula	Dic	6.40		1980	B
Columbidae	scapula	Dic	6.90		1980	B
Columbidae	scapula	Dic	7.00		1980	B
Columbidae	scapula	Dic	7.40		1980	B
Columbidae	scapula	Dic	7.50		1980	B

Table 7.—*Continued.*

Taxon	Element	Dimension	Measure-ment	Fusion	PN	Stratum
Columbidae	scapula	Dic	7.70		2203	B
Columbidae	scapula	Dic	7.80		2220	C
Columbidae	scapula	Dic	7.90		2201	B
Columbidae	scapula	Dic	8.10		2042	C
Columbidae	scapula	Dic	9.50		2042	C
Columbidae	scapula	Dic	9.70		2072	C
Columbidae	tarsometatarsus	Bd	6.80		2061	B
Columbidae	tarsometatarsus	Bd	7.00		2231	D
Columbidae	tarsometatarsus	Bd	7.40		2041	C
Columbidae	tarsometatarsus	Bp	6.50		2061	B
Columbidae	tarsometatarsus	GL	33.50		2061	B
Columbidae	tibiotarsus	Bd	5.10		1971	A
Columbidae	tibiotarsus	Bd	5.70		2020	A
Columbidae	tibiotarsus	Bd	5.70		2024	A
Columbidae	tibiotarsus	Bd	5.80		2017	A
Columbidae	tibiotarsus	Bd	6.80		2066	C
Columbidae	tibiotarsus	Bd	7.40		2066	C
Columbidae	tibiotarsus	Dd	4.80		1971	A
Columbidae	tibiotarsus	Dd	5.50		2017	A
Columbidae	tibiotarsus	Dd	5.50		2024	A
Columbidae	tibiotarsus	Dd	6.00		2020	A
Columbidae	tibiotarsus	Dd	6.50		2066	C
Columbidae	tibiotarsus	Dd	6.70		2066	C
Columbidae	tibiotarsus	Dip	8.90		2072	C
Columbidae	tibiotarsus	Dip	9.30		2041	C
Columbidae	ulna	Bp	5.50		2042	C
Columbidae	ulna	Bp	7.20		2041	C
Columbidae	ulna	Did	5.10		2029	A
Columbidae	ulna	Did	5.30		2021	A
Columbidae	ulna	Did	6.40		2102	C
Columbidae	ulna	Did	7.20		2072	C
Columbidae	ulna	Dip	7.20		2042	C
Columbidae	ulna	Dip	9.80		2041	C
Columbidae	ulna	GL	57.00		2041	C
Oryzomyini	femur	DC	4.10	pfdunf	2201	B
Oryzomyini	femur	DC	4.50	pf	1926	B
Oryzomyini	femur	DC	4.60	pf	1917	B
Oryzomyini	femur	DC	4.90	pfdunf	2114	C
Oryzomyini	femur	GL	34.80	pfdunf	2201	B
Oryzomyini	femur	GL	44.20	pfdunf	2114	C
Oryzomyini	humerus	GL	28.80	punfdf	2072	C
Oryzomyini	humerus	GL	29.40	punfdf	2020	A
Oryzomyini	humerus	GL	31.20	punfdf	2020	A
Oryzomyini	humerus	GL	31.70	punfdf	2020	A
Oryzomyini	mandible	AL	8.54		1974	B
Oryzomyini	mandible	AL	9.27		2042	C
Oryzomyini	mandible	AL	9.55		2041	C
Oryzomyini	mandible	AL	9.60		2042	C
Oryzomyini	mandible	AL	9.70		2041	C
Oryzomyini	mandible	AL	10.87		2051	A
Oryzomyini	maxilla	AL	8.78		2052	A
Oryzomyini	maxilla	AL	9.29		2053	A
Oryzomyini	maxilla	AL	9.53		2041	C
Oryzomyini	maxilla	AL	9.53		2041	C
Oryzomyini	maxilla	AL	9.53		2041	C
Oryzomyini	maxilla	AL	9.70		2029	A

Table 7.—*Continued.*

Taxon	Element	Dimension	Measurement	Fusion	PN	Stratum
Oryzomyini	maxilla	AL	9.80		2027	A
Oryzomyini	maxilla	AL	9.90		2020	A
Oryzomyini	maxilla	AL	9.92		2041	C
Oryzomyini A	astragalus	GL	4.00		1917	B
Oryzomyini A	astragalus	GL	4.20		2027	A
Oryzomyini A	astragalus	GL	4.50		1913	A
Oryzomyini A	astragalus	GL	4.80		1909	A
Oryzomyini A	astragalus	GL	4.80		1909	A
Oryzomyini A	astragalus	GL	5.81		2032	A
Oryzomyini A	calcaneus	GL	6.37	punf	2029	A
Oryzomyini A	femur	DC	3.20	pf	2066	C
Oryzomyini A	humerus	GL	21.70	punfdf	2066	C
Oryzomyini A	mandible	AL	7.00		2022	A
Oryzomyini A	mandible	AL	7.20		2209	B
Oryzomyini A	mandible	AL	7.50		1984	B
Oryzomyini A	maxilla	AL	6.75		2025	A
Oryzomyini B	astragalus	GL	6.30		1909	A
Oryzomyini B	astragalus	GL	6.59		1926	B
Oryzomyini B	astragalus	GL	6.70		2018	A
Oryzomyini B	calcaneus	GL	8.03	pf	1980	B
Oryzomyini B	calcaneus	GL	11.49	pf	2029	A
Oryzomyini B	femur	DC	5.30	pfdunf	2066	C
Oryzomyini B	femur	DC	5.40	pfdunf	2087	C
Oryzomyini B	femur	GL	46.60	pfdunf	2066	C
Oryzomyini B	femur	GL	46.70	pfdunf	2087	C
Oryzomyini B	mandible	AL	9.77		2066	C
Oryzomyini B	mandible	AL	10.10		2019	A
Oryzomyini B	mandible	AL	10.10		2022	A
Oryzomyini B	mandible	AL	10.40		2021	A
Oryzomyini B	tibia	GL	45.10	punfdf	2066	C
Oryzomyini B	tibia	GL	46.70	punfdf	2066	C
Dasyprocta aguti	humerus	Bd	11.90		2053	A
Dasyprocta aguti	tibia	Bd	9.90		2018	A
Canis familiaris	maxilla	B	12.62		2052	A
Canis familiaris	maxilla	L	13.90		2052	A

juveniles. Before extinction, both species were endemic on Montserret and elsewhere in the Lesser Antilles. The presence of both rice rats on the same island, however, is unusual. Although the habitats preferred by the rice rats are not known, at least some members of this group tolerate disturbed, brushy, or cleared habitats such as those around human habitations, from which they raid fields and stored foods (Wolfe, 1982; Nowak and Paradiso, 1983:572; Eisenberg, 1989:351).

None of the rice rat materials were found in combinations that suggested animals that died in situ with little post-mortem disturbance. It has been demonstrated in other contexts that rodents even smaller than these were consumed (Szuter, 1988, 1991). Element distributions are confused by the use of two different screen sizes and identifiability. Over a third (36%) of the rice rat bones were cranial fragments identified in the ⅛″ meshed screen. Only 11 carpals or tarsals could be identified as rice rats, and all were from the ⅛″ meshed fraction. The ⅛″ mesh fraction itself, however, comprised only a quarter of the excavated area of each
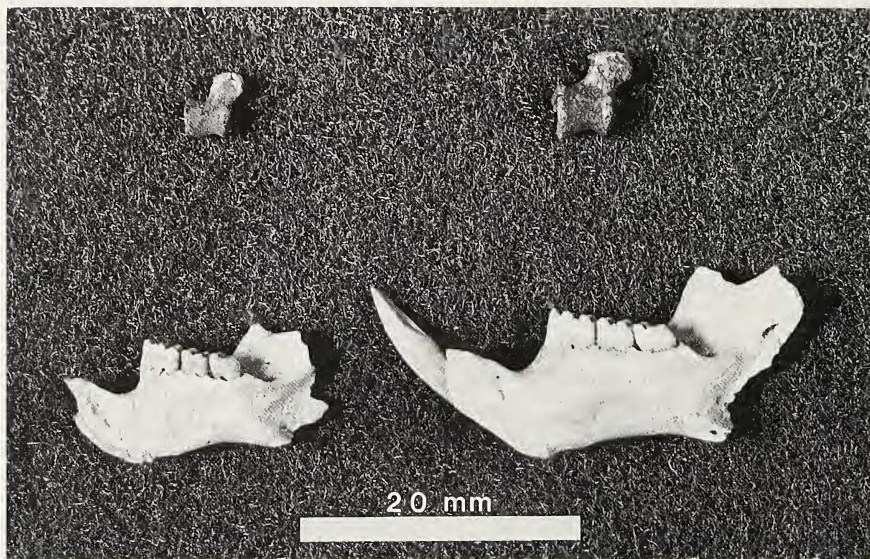
Fig. 3.—Astragali and mandible of oryzomyine A and oryzomyine B. The small astragalus and mandible are of oryzomyine A and the large elements are of oryzomyine B.

unit. No butchering marks were found on any of the Trants assemblage other than burning; 3% of the rice rat bones had been burned. There is no reason to assume these rice rats were not consumed, and the abundance of these animals in this assemblage and the absence of intact skeletons seems solid evidence that these fairly large rodents were eaten.

The land clearing and food storage associated with Saladoid peoples probably enhanced the resource base for rice rats on Montserrat. Wing (1993b) found that rice rats were extremely abundant in the Hope Estate faunal assemblage associated with a Saladoid occupation on the island of St. Martin. She anticipated that this level of use over a long period of time would result in overexploitation of rice rats. Based on data for a closely related rice rat (Oryzomys palustris) (Negus et al., 1961), she proposed that heavy human predation over time would result in a relative decrease in West Indian rice rat populations and a corresponding decrease of rice rats in human deposits. This might also be associated with a relatively heavy use of young animals as litter size increased in response to low population density (Negus et al., 1961). Wing (1993b) also predicted a decline in size as a consequence of selective predation upon larger rice rats.

The Trants oryzomyine materials were examined for evidence of overuse as proposed for Hope Estate. In the first place, rice rats constituted a much lower percentage of the individuals in the Trants collection than in that from Hope Estate. However, there was a decline in the percentage of oryzomyines from 11% of the individuals in Stratum C/D to 9% of the individuals in Stratum B. This decline in the usage of rice rats needs to be tested over a larger portion of the Trants site. If it is supported by additional stratigraphic analysis, then this may represent either a change in prey preference on the part of Saladoid residents or a decline in the island's rice rat population, or both.

In order to explore whether younger animals were exploited during more recent time periods, toothwear was compared among the three strata (Table 8). The

Table 8.—*Toothwear observed for oryzomyines, Trants, Montserrat. Wear stages as defined by Wing (1993b).*

Taxon	Element	Wear	Stratum
Oryzomyini	mandible	2	A
Oryzomyini	mandible	2	A
Oryzomyini	mandible	2.5	A
Oryzomyini B	mandible	2.5	A
Oryzomyini A	mandible	3	A
Oryzomyini B	mandible	3	A
Oryzomyini	mandible	3.5	A
Oryzomyini B	mandible	4	A
Oryzomyini A	mandible	2	B
Oryzomyini A	mandible	3	B
Oryzomyini	mandible	2	C
Oryzomyini	mandible	2	C
Oryzomyini	mandible	2	C
Oryzomyini	mandible	2	C
Oryzomyini B	mandible	2	C
Oryzomyini	maxilla	2	A
Oryzomyini	maxilla	3	A
Oryzomyini A	maxilla	3	A
Oryzomyini	maxilla	4	A
Oryzomyini	maxilla	4	A
Oryzomyini	maxilla	4	A
Oryzomyini B	maxilla	4	A
Oryzomyini	maxilla	2	C
Oryzomyini	maxilla	2	C
Oryzomyini	maxilla	2	C
Oryzomyini	maxilla	3	C

degree of toothwear in Strata C and B suggests that all individuals were juveniles. However, the oryzomyine mandibles and maxilla both indicate that those deposited in the lower strata were generally younger than those deposited in Stratum A. This suggests that rice rat population density during the Saladoid occupation was lower, perhaps due to greater predation compared to the post-Columbian period. Unfortunately, there were not sufficient measurements in each of the three strata to assess changes in body size through time. These data do suggest that rice rats were subject to overpredation during the Saladoid occupation of Trants compared to the post-Columbian occupation of the island, although data from contexts with better temporal definition are needed to explore this possibility further. The large number of older rice rats in Stratum A probably indicates that, at least during part of the time represented by the hoe zone, these were natural deaths in an unstressed population.

Terrestrial vertebrate resources also included two exotic forms introduced by humans. One of these is the agouti (*Dasyprocta aguti*). Steadman identified an agouti from Stratum 1(D) in the 1979 Trants fauna, a disturbed context. The 1990 sample contained 12 additional agouti bones, unfortunately also from disturbed contexts (Stratum A). The agouti was introduced from the South American mainland sometime in the pre-Columbian period. They are found in a number of archaeological deposits throughout the Lesser Antilles and until recently still lived on some of the islands (Nowak and Paradiso, 1983:816; Wing, 1989). They are still found on Montserrat and the presence of agouti bones in disturbed contexts

Table 9.—*Comparison of resource use among several Saladoid vertebrate collections. Cayon data are from Wing (1989); Pearls data are from Stokes (1993); Trants ¼" data are from this paper; and Trants ⅛" data are from this paper (Trants ⅛") and from Test Pit 1 (Steadman et al., 1984b).*

	Cayon		Pearls		Trants ¼"		Trants ⅛"		Test Pit 1	
	MNI	%MNI	MNI	%MNI	MNI	%MNI	MNI	%MNI	MNI	%MNI
Terrestrial	58	58.6	21	32.8	48	57.1	40	44.4	39	69.6
Inshore			14	21.9	1	1.2	6	6.7		
Reef	24	24.2	27	42.2	35	41.7	43	47.8	15	26.8
Pelagic	17	17.2	2	3.1			1	1.1	2	3.6
Totals	99		64		84		90		56	

may mean that they burrowed into the site or were buried in it quite recently. Therefore, it is not possible to confirm that these agouti remains are recent or Saladoid.

The remains of two dogs were identified in the ⅛" samples and two additional dogs were identified in the ¼" samples (Tables 2, 3). A subadult was found in Feature 2, Unit N396E571 (PN 1934, 1937) and the other three were individuals represented by bones too fragmentary to estimate age (PN 1923, 1929, 1935, 1943, 2087). Dogs are not endemic to the West Indies and probably accompanied humans during their migrations into the region. Since most dogs identified in the Caribbean have been recovered from burials rather than from middens (Wing, 1989), it is possible that they were valued companions rather than sources of food. However, the Trants dogs were not associated with burials nor were they articulated burials themselves.

DISCUSSION

The percentage of Terrestrial individuals puts the Trants assemblage above the average for early sites in the Lesser Antilles as calculated by Wing (1989; Table 1). Although sharks and bony fishes were the most common vertebrate group, birds and reptiles constituted a significant portion of the assemblage, with mammals somewhat less abundant.

Data from Trants indicate that people living on Montserrat made use of indigenous terrestrial fauna, exotic mammals, and marine animals. In this respect, Trants conforms to the general Caribbean pattern, in which most of the resources are from the nearest habitats (Wing, 1989). In the case of Trants, it appears that terrestrial and marine vertebrates were used in about equal numbers. Indigenous terrestrial fauna included rice rats, pigeons, passerine birds, and iguanas. Since this part of the Trants project focused on the vertebrate component, land crabs and mollusks are not included in this calculation; however, these were also very common in the collection (David Watters, personal communication, 1993). Some of the terrestrial resources were exotic animals introduced to the island from South America. As expected, marine resources in the Trants collection included sea turtles and fishes from banks, reefs, and offshore areas, with emphasis on those most accessible from the site.

Although these data support a general Saladoid pattern, they also indicate that a variety of subsistence strategies were practiced in the Lesser Antilles by Saladoid peoples, each one reflecting local conditions. Comparing the Trants materials to those from early sites on Grenada (Pearls) and St. Kitts (Cayon) (Wing, 1989; Stokes, 1993), the significance of adaptations to local conditions and the diversity

of subsistence strategies practiced in the Lesser Antilles by Saladoid peoples is clear (Table 9). The only mammal identified in all three collections was the dog. Both Trants and Pearls contained high percentages of oryzomyine rodents—17% of the individuals in the Pearls collection and 9% of the Trants ⅛″ collection. By contrast, pigeons, so common in the Trants collection, were not identified in the Pearls assemblage. Iguana were found in all three collections; sea turtles, rare in the Trants collection, were not identified in the Cayon or Pearls collections.

Although the percentages of fish individuals from reefs and banks was similar between Pearls and Trants, there were differences among the kinds of fishes identified. For example, 28% of the individuals in the Trants collection (the ⅛″ samples) are groupers, more typical of deeper waters, in contrast to 12% of the individuals in the Pearls collection. Wrasses and parrotfishes, typical of reefs, contributed 4% of the Trants ⅛″ and 16% of the Pearls assemblages. Shallow water, inshore species, rare in the Trants collection, contributed almost a quarter of the Pearls individuals.

These differences probably reflect the types of marine habitats associated with each island. Shallow water areas are limited around Montserrat, which has more patch reefs than fringe reefs compared to islands such as Grenada and Barbuda. This leads to the conclusion that the subsistence strategy practiced at Trants is a local adaptation. It also suggests that it is probably not appropriate to develop models for the colonization of the Caribbean based on the assumption that Saladoid peoples everywhere made use of marine and terrestrial resources in the same way (Watters and Rouse, 1989).

One characteristic all three assemblages share is a high percentage of oryzomyine individuals, raising the question of whether rodents could support exploitation at these levels for a long period of time. (The hutia was introduced to Montserrat.) Consumption of rice rats increased between pre-horticultural and horticultural strata and then declined in later ones (Wing, 1993a). It may be that rice rats were consumed in limited amounts as a supplement to marine resources, iguanas, and land crabs before gardening began on those islands which were occupied during pre-horticultural periods. Use of rice rats and other garden pests may then have increased in levels associated with horticulture. Human horticultural activities could have contributed to an increase in rice rat population size because these plots provided optimum habitat for them. Rice rats could have been both a terrestrial mammalian meat source for Saladoid peoples as well as pests attracted by gardens and stored foods. Saladoid colonists may not have intentionally sought out rice rats, but rather taken advantage of a resource that essentially came to them, much as the garden hunting model suggested by Linares (1976).

The declining representation of rice rats in later horticultural deposits might indicate that the "vermin" problem either was under control or had declined in the face of considerable pressure both from humans and their dogs. Ultimately, habitat destruction and the introduction of predators/competitors such as cats, mongoose, and Old World rats during the post-Columbian era drove rice rats to extinction.

Such a pattern would imply a relationship between gardening, food storage, predation, and the numbers of rice rats in archaeological deposits that has little to do with preference for or prejudice against marine resources. It is important, however, to emphasize that without a better pre-Saladoid, Saladoid, and post-Saladoid stratigraphic sequence, change through time in the use of rice rats on Montserrat or an association of their use with gardening cannot be proven.

CONCLUSION

An important aspect of Caribbean cultural history is the role played by terrestrial animals in Saladoid subsistence efforts as they colonized the island chain. The data from Trants indicate that people living there used both terrestrial and marine resources. Use of indigenous terrestrial fauna and transportation of exotic animals throughout the island system were important characteristics of colonization in the Lesser Antilles. Perhaps some terrestrial resources could not support the combination of long-term exploitation and predation by introduced carnivores and eventually became extinct, leaving only their skeletal remains to remind us of their existence.

On a regional scale, Trants provides additional evidence that extensive use of terrestrial resources was a consistent Saladoid feature, but that there was much variation among Saladoid occupations in the Lesser Antilles. Many different subsistence strategies were practiced in the Lesser Antilles by Saladoid peoples, each one reflecting local conditions. Future work in the Caribbean should attempt to explore temporal variation and activity areas within Saladoid settlements such as Trants.

ACKNOWLEDGMENTS

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